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SUBJECT: CANADIAN TRANSPORTATION SAFETY BOARD

RELEASES FINAL REPORT ON CRASH OF SWISSAIR FLIGHT 111

1. THE TRANSPORTATION SAFETY BOARD OF CANADA (TSB) TODAY RELEASED ITS FINAL REPORT ON SWISSAIR FLIGHT 111, WHICH CRASHED OFF THE COAST OF NOVA SCOTIA ON SEPTEMBER 2, 1998, KILLING ALL ABOARD, INCLUDING 103 AMERICAN CITIZENS. THIS REPORT MARKS THE CONCLUSION OF THE TSB'S LONGEST AND MOST EXTENSIVE CRASH INVESTIGATION EVER, CONDUCTED AT A TOTAL COST OF C\$ 57 MILLION.

2. THE TSB CONCLUDED THAT THE ONBOARD FIRE WHICH LED TO THE CRASH OF SWISSAIR 111 STARTED IN A HIDDEN OVERHEAD AREA ON THE STARBOARD SIDE OF THE PLANE JUST ABOVE AND AT THE REAR OF THE COCKPIT AREA. THE SOURCE OF IGNITION WAS AN ARCING EVENT IN THE AIRCRAFT'S ELECTRICAL WIRING. THE TSB PINPOINTED ONE PARTICULAR SECTION OF WIRING FROM THE AIRCRAFT'S IN-FLIGHT ENTERTAINMENT SYSTEM FOR BUSINESS CLASS PASSENGERS AS BEING ASSOCIATED WITH THE INITIAL ARCING EVENT, THOUGH THEY COULD NOT SAY WITH CERTAINTY THAT THE ARCING THAT OCCURRED THERE WAS IN FACT THE LEAD EVENT. THE TSB CONCLUDED THAT ARCING ALSO OCCURRED AT OTHER POINTS IN THE WIRING FOR THE IN FLIGHT ENTERTAINMENT SYSTEM WHICH WERE NOT RECOVERED, MAKING IT IMPOSSIBLE TO ISOLATE THE LEAD ARCING EVENT. THIS ARCING IGNITED THE METALLIZED POLYETHELENE TEREPHTHALATE (MPET) MATERIAL ON THE INSULATION BLANKETS ABOVE THE CEILING OF THE RIGHT REAR COCKPIT AREA. THE TSB CONCLUDED THAT THE MPET BLANKETS WERE EXCESSIVELY FLAMMABLE AND THAT ABSENT THE PRESENCE OF FLAMMABLE MATERIAL IN THE VICINITY OF THE INITIAL ARCING EVENT, THE DISASTER WOULD NOT HAVE OCCURRED.

3. THE TSB NOTED THAT FIRE/SMOKE DETECTION AND SUPPRESSION DEVICES WERE NOT PRESENT IN THE AREA WHERE THE FIRE STARTED, AND WERE NOT REQUIRED AT THAT TIME. THE TSB CONCLUDED THAT THE FLIGHT CREW DID NOT HAVE THE NECESSARY TOOLS, PROCEDURES, OR TRAINING TO LOCATE AND ELIMINATE THE FIRE BEFORE IT BECAME UNCONTROLLABLE. THE TSB ALSO CONCLUDED THAT AIR CIRCULATION CHARACTERISTICS ABOARD THE AIRCRAFT VENTED SMOKE AWAY FROM THE CREW INITIALLY. THIS CONTRIBUTED TO A DELAY IN RECOGNIZING THE EXTREMELY SERIOUS NATURE OF THE SITUATION, AND LED THEM INITIALLY TO ERRONEOUSLY BELIEVE THAT THE SMELL THEY DETECTED WAS THE RESULT OF AN ANOMALY IN THE AIR CONDITIONING SYSTEM INSTEAD OF AN ONBOARD FIRE.

4. HOWEVER, THE TSB ALSO CONCLUDED THAT AN ACCURATE EARLY ASSESSMENT OF THE SITUATION WOULD STILL NOT HAVE GIVEN THE CREW OF SWISSAIR 111 SUFFICIENT TIME TO EXECUTE A SAFE EMERGENCY LANDING IN HALIFAX. THE TSB CONCLUDED THAT, GIVEN IDEAL CONDITIONS, THE EARLIEST MOMENT THAT SWISSAIR 111 COULD HAVE LANDED WAS 22:27 LOCAL TIME. HOWEVER, THE ONBOARD FIRE RESULTED IN A RAPID DETERIORATION OF FLIGHT CONTROL SYSTEMS IN THE COCKPIT AT 22:25. THE TSB THEREFORE CONCLUDED THAT THE CREW WOULD HAVE LOST CONTROL OF THE AIRCRAFT SHORT OF THE RUNWAY EVEN IF THEY HAD ACTED IMMEDIATELY TO EXECUTE AN EMERGENCY LANDING AT THE MOMENT THEY FIRST SMELLED SMOKE.

5. IN ADDITION TO THE 14 AVIATION SAFETY RECOMMENDATIONS ALREADY MADE IN THE COURSE OF THIS INVESTIGATION, THE TSB RELEASED AN ADDITIONAL NINE RECOMMENDATIONS IN CONJUNCTION WITH THEIR FINAL REPORT. THESE RECOMMENDATIONS DEAL WITH TESTING AND FLAMMABILITY STANDARDS FOR INSULATION MATERIALS, WITH AIRCRAFT ELECTRICAL SYSTEMS INCLUDING CERTIFICATION OF ADD-ON ELECTRICAL SYSTEMS FOR COMMERCIAL AIRCRAFT, AND IMPROVEMENTS TO THE CAPTURE AND STORAGE OF IN FLIGHT DATA.

6. THE TSB OFFICIALS PRESENT EMPHASIZED THAT THE PURPOSE OF THEIR INVESTIGATION IS TO IMPROVE AVIATION SAFETY AND TO PREVENT FUTURE TRAGEDIES, NOT TO ASSIGN BLAME OR LIABILITY FOR THE CRASH OF SWISSAIR 111. THEY EXPRESSED CONFIDENCE THAT THE RECOMMENDATIONS PRODUCED AS A RESULT OF THEIR INVESTIGATION HAVE AND WILL CONTINUE TO IMPROVE AVIATION SAFETY. WHETHER THE INFORMATION IN THEIR FINAL REPORT WILL PROVIDE ANY MEASURE OF CLOSURE OR SATISFACTION FOR THE FAMILIES OF THE VICTIMS OF SWISSAIR REMAINS TO BE SEEN. THE TSB REPORT IS AVAILABLE IN FULL AT:  
[HTTP://WWW.TSB.GC.CA](http://www.tsb.gc.ca).

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